

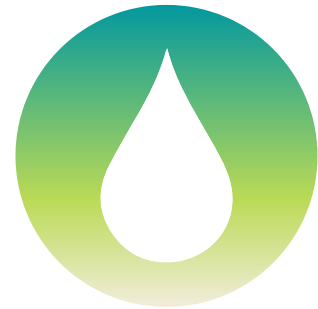
VITAMINS:
WHAT DO FAT - & WATER -
SOLUBLE MEAN?

Patient Resource

VITAMINS: WHAT DO FAT- & WATER- SOLUBLE MEAN?

What is solubility?

Solubility refers to the way that a vitamin dissolves in another substance. Vitamins need to be soluble in order for our body to be able to use the food that we eat. When we describe vitamins in terms of solubility, it helps us understand better how to break them down into their nutritional components. The solubility properties of a vitamin indicate how they will be stored in the body. For example, a water soluble vitamin can easily transport to the bloodstream. Fat-soluble vitamins are first dissolved into the dietary fat they are consumed with and then absorbed by the body.



BITE - SIZED FACTS

Vitamins			
Solubility	Fat-soluble	Water-soluble	
Vitamins	<ul style="list-style-type: none"> • Vitamin A • Vitamin D • Vitamin E • Vitamin K 	B-Complex <ul style="list-style-type: none"> • Thiamin (B1) • Riboflavin (B2) • Niacin (B3) • Pantothenic acid (B5) 	Vitamin C <ul style="list-style-type: none"> • Vitamins B6 • Biotin (B7) • Folate (B9) • Vitamin B12
Location of body storage	Liver and adipose (fatty) tissue	Not stored in the body and must be replaced daily	
Rate of Elimination	Slower than water-soluble vitamins	Eliminated in urine and require regular (continuous) daily supply in the diet	
Destroyed by cooking?	No	Yes; easily destroyed in storage, cooking, or preparation process	



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DEFINITIONS

Fat-Soluble Vitamins

Fat-soluble vitamins are those that are easily stored in fat once absorbed. They are soluble in the fatty tissues of the body.



Water-Soluble Vitamins

Water soluble vitamins are soluble in water or water-like substances. As you might predict, water-soluble vitamins are washed out of the body more quickly than their fat-soluble counterparts. However, the B-complex and C vitamins are found in many foods and regular intake and a healthy lifestyle is usually sufficient to avoid deficiency.

ABSORPTION ALTERATIONS

Am I at risk?

Certain people can be at risk for problems with absorbing vitamins properly. Be sure to ask your doctor about potential concerns if you:

- Have certain medical conditions
- Have certain genetic mutations (i.e. MTHFR)
- Are trying to conceive
- Are pregnant or lactating
- Are an older adult
- Have had weight loss surgery
- Have IBD (Crohn's or UC)
- Have or are at risk for osteoporosis
- Have an autoimmune or inflammatory disease

**DON'T
FORGET**



Taking vitamins does not lessen the need for a healthy, balanced diet. To get the best potential from your vitamins, you need to eat a variety of healthy foods, including getting the right amount of fat in your diet to ensure that fat-soluble vitamins are absorbed properly. You also need to drink sufficient water to ensure your body can function properly.

